Giada De Lazzari

Patient-derived intestinal 3D model for studying rare disorders: the Tricho-Hepato-Enteric Syndrome paradigm (TH3S)

Duration	September 2021 - December 2022
Short Bio	I hold a 2018 Master's degree in Biomedical Science, focusing on the thesis "Inhibition of JAK2/STAT3 axis leads to apoptosis of Chronic Lymphocytic Leukemia neoplastic clone." Following six months at the Institute of Pediatric Research in Padova, exploring extracellular vesicles role in neuroblastoma as post-graduate researcher, I pursued a PhD at the University of Padova. In this program, centered on "Development of ex-vivo culture methods for Extracellular Vesicles testing," I gained expertise in assessing immunomodulatory effects in Inflammatory Bowel Disease (IBD) and Trico-hepato-enteric syndrome (THES). As part of the PhD project I moved in France and thanks to the collaboration with Prof. Vergnolle's group, we successfully developed patient-derived organoids, providing innovative ex-vivo translational models to study THES and IBD mechanisms.
Home Institution	University of Padova
Host Institution	Digestive Health Research Institute, INSERM U1220, Toulouse
Project Description	Trico-hepato-enteric syndrome (THES) is a rare bowel disorder characterized by severe symptoms. Caused by mutations in TTC37 and SKI2VL genes, THES is considered a monogenic cause of inflammatory bowel disease (IBD). My project aimed to develop a personalized 3D *in-vitro* model from patient biopsies to uncover THES mechanisms, offering insights into TTC37 deficiency and shared pathways in inflammation development, thanks to the collaboration with Prof. Vergnolle's group (INSERM). This innovative *ex-vivo* translational model will enhance our understanding of rare diseases like THES, with broader implications for studying other rare pathologies.
Personal Statement	Thanks to this collaboration, I had a unique opportunity to work in an international team expert in organoid production. This experience significantly enriched my scientific background, providing valuable insights into the development of innovative ex-vivo translational models. This opportunity allowed me to moved back to Italy and being employed as a post-doctoral researcher at the Candiolo Cancer Institute focusing on studying Ovarian Cancer mechanisms through the development of novel preclinical models, including organoids.